

REMARKS

Claim 1 is amended. Independent claim 65 has been added. With this response, claims 1-7 and 53-65 are now pending.

Applicant does not believe that any fees are due at this time; however, should any fees under 37 C.F.R. §§ 1.16 to 1.21 be required for any reason relating to this document, the Commissioner is authorized to deduct the fees from Howrey Simon Arnold & White, LLP Deposit Account No. 01-2508/11181.0027.NPUS00/BNT.

Claim 1 has been amended to indicate that the isolated peptide is an antimicrobial, antifungal, anticancer, proliferative, or stimulative peptide. This language is clearly supported throughout the specification, e.g. at page 2, lines 4-5 and at page 14, lines 7-20. Claim 1 is also amended to reflect that the peptides have no more than 20% phenylalanine and tryptophan residues. Review of the many inventive peptides disclosed in Applicant's sequence listing shows that the peptides have low combined amounts of these two hydrophobic amino acids. SEQ ID NO:43 contains one phenylalanine, and no tryptophan residues, a content of 6.7% ($1/15 = 6.7\%$). Accordingly, amended independent claim 1 still encompasses elected SEQ ID NO:43.

Claims 6 and 7 have been amended to remove SEQ ID NO:75 and SEQ ID NO:84, as these peptides contain greater than 20% phenylalanine and tryptophan. The remaining SEQ ID NOS in claims 6 and 7 have no more than 20% phenylalanine and tryptophan.

I. Claim objections

Claims 5-7 and 60 were objected to as the recite non-elected subject matter. Applicant had elected the peptide of SEQ ID NO:43 in a paper filed July 1, 2003.

Claims 5-7 depend from independent claim 1. If claim 1 is found to be allowable, then claims 5-7 should be found to be allowable as well. Applicant does not dispute that claim 5 does not encompass SEQ ID NO:43 (SEQ ID NO:43 does not have valine as the first amino acid). However, Applicant notes that none of the peptides cited by the Examiner in rejecting the claims start with valine either. Claims 6 and 7 include SEQ ID NO:43, as well as a list of other peptides.

Claim 60 defines a peptide having, among other qualities, the first amino acid as valine. Accordingly, claim 60 does not encompass SEQ ID NO:43, as it does not have valine at the first amino acid position. Accordingly, the Examiner may withdraw claim 60 if examination is limited to SEQ ID NO:43.

II. Rejection under 35 U.S.C. § 112, second paragraph

Claims 1-7, 55-58, and 60 were rejected under 35 U.S.C. § 112, second paragraph as being allegedly indefinite in claiming the subject matter of the invention.

The Examiner indicated that the phrase “at least about” renders the claims indefinite. In order to expedite allowance of claims, Applicant has removed the word “about” from the claims.

Applicant respectfully requests that the rejections of claims 1-7, 55-58, and 60 under 35 U.S.C. § 112, second paragraph be withdrawn.

III. Rejection under 35 U.S.C. § 102

Claims 1-3, 6, 55-57, and 60 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Julian et al. (U.S. Patent No. 5,717,064; hereinafter “Julian”).

Julian disclosed Hecate, a peptide 23 amino acids in length. The Examiner indicated that this is “about” 22 amino acids in length, is 72.7% identical to SEQ ID NO:43, and is 100% F, L, A, and K.

Independent claim 1 has been amended to indicate that the peptide is 5-22 amino acids in length. As Julian discloses a 23 amino acid peptide, it is outside of the claimed range. Therefore, independent claim 1 and its dependent claims 2-3, 6, and 55-57 cannot be anticipated by Julian.

Independent claim 60 specifies that the peptide is 5-22 amino acids in length, and that the first amino acid of the peptide is valine. Hecate is 23 amino acids in length, and its sequence does not start with valine. As Julian fails to teach a peptide with these properties, it cannot be found to anticipate claim 60.

Claims 1-4, 55-58, and 60 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Alibhai et al. (WO 01/49834; hereinafter “Alibhai”).

Alibhai disclosed a peptide having the amino acid sequence Ala-Ala-Leu-Ala-Ala-Phe-Ala-Lys-Leu-Leu (AALAAFAKLL; Alibhai’s SEQ ID NO:234). This peptide is 10 amino acids in length, and is 100% F, L, A, and K.

Independent claim 1 has been amended to indicate that the peptide is an antimicrobial, antifungal, anticancer, proliferative, or stimulative peptide. Alibhai discusses peptides which maintain insecticidal properties while displaying reduced or eliminated allergenicity. Alibhai does not provide any suggestion that SEQ ID NO:234 has any antimicrobial, antifungal, anticancer, proliferative, or stimulative properties. Accordingly, Applicant asserts that Alibhai

cannot be found to anticipate amended independent claim 1 and its dependent claims 2-4 and 55-58.

Independent claim 60 specifies that the first amino acid of the peptide sequence is valine. As Alibhai's SEQ ID NO:234 does not have valine at the first position, it cannot be found to anticipate claim 60.

Claims 1-4, 55, and 60 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Nordstedt et al. (U.S. Patent No. 6,331,440; hereinafter "Nordstedt").

Nordstedt disclosed a peptide having the amino acid sequence KLVAFF. This peptide is five amino acids in length, and is 80% F, L, A, and K.

Independent claim 1 has been amended to indicate that the peptide is an antimicrobial, antifungal, anticancer, proliferative, or stimulative peptide. Nordstedt discussed sequences useful for inhibiting the polymerization of an amyloid beta-peptide. KLVAFF is listed in claim 5 as a particular peptide useful for inhibiting the polymerization by binding to the amyloid beta peptide. Nordstedt does not provide any suggestion that KLVAFF has any antimicrobial, antifungal, anticancer, proliferative, or stimulative properties. Accordingly, Applicant asserts that Nordstedt cannot be found to anticipate amended independent claim 1 and its dependent claims 2-4 and 55.

Independent claim 60 specifies that the first amino acid of the peptide is valine. As Nordstedt's KLVAFF does not have valine at the first position, it cannot be found to anticipate claim 60.

Claims 1-3, 55-58, and 60 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Bessalle et al. (*J. Med. Chem.*, 36: 1203-1209, 1993; hereinafter "Bessalle").

Bessalle disclosed peptide Modelin-3, which is 17 amino acids in length, and is 94% F, L, A, and K.

Independent claim 1 has been amended to indicate that the peptide has no more than 20% phenylalanine and tryptophan residues. Modelin-3 contains four phenylalanine and one tryptophan residues, for a combined percentage of 29.4% ($5/17 = 29.4\%$). Accordingly, Applicant asserts that Bessalle cannot be found to anticipate independent claim 1 and its dependent claims 2-3 and 55-58.

Independent claim 60 specifies that the first amino acid of the peptide is valine. As Bessalle's Modelin-3 does not start with a valine, it cannot be found to anticipate claim 60.

Applicant respectfully requests that the rejections of the pending claims under 35 U.S.C. § 102 be withdrawn.

IV. Added independent claim 65 should be allowable

Added independent claim 65 is directed towards isolated antimicrobial, antifungal, anticancer, proliferative, or stimulative peptides 5-22 amino acids in length, having at least 95% phenylalanine, leucine, alanine, and lysine residues. SEQ ID NO:43 falls within the scope of claim 65. None of the references cited by the Examiner disclose a peptide having these properties. Accordingly, Applicant asserts that independent claim 65 should be allowable.

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In light of the above amendments and remarks, reconsideration and withdrawal of the outstanding objections and rejections are respectfully requested. All amendments are made in a good faith effort to advance the prosecution on the merits. Applicant respectfully submits that no amendments have been made to the pending claims for the purpose of overcoming any prior art rejections that would restrict the literal scope of the claims or equivalents thereof. Applicant reserves the right to subsequently take up prosecution of the claims originally filed in this application in continuation, continuation-in-part, and/or divisional applications.

The Examiner is encouraged to call the undersigned should any further action be required for allowance.

Respectfully submitted,



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December 9, 2003